



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

MONEY AND PRICES.

I. *The Silver Issue.*

THE sudden projection of the demand for the free coinage of silver into the political campaign of 1896 was a great surprise, but it is not too much to say that this at once became and remained the controlling issue of that contest. The rest of the Chicago platform was certainly overshadowed, if not forgotten, in the discussion of 16 to 1. At the present time, however, it appears that these conditions are likely to be reversed ; for the silver question is almost overshadowed by the discussion of "trusts" and "imperialism." It has apparently lost its relative importance, at least in the minds of the politicians. This is shown by the ease with which the Republican party has been led to record itself as unreservedly in favor of the gold standard. It is true that in the new currency law there still remains a mild expression in favor of international bimetallism, but no one seems to take it seriously. Mr. Bryan, too, is generally regarded as holding to the money issue merely because that is the one with which he is specifically identified. Others can speak against imperialism and in denunciation of trusts with equal authority ; but he, more than any other man, is the representative of silver. Whether he succeeds in carrying the silver issue into the campaign or not, it is interesting to inquire what would be the position of that issue, if it should come before the people now, as it did in 1896.

The fundamental assumptions of bimetallism and of the demand for the free coinage of silver are : (1) that prices depend upon the quantity of money ; (2) that government can manipulate the quantity of money so as to control prices ; and (3) that thereby the economic relations between individuals can be made to conform more closely to the rule of justice. These assumptions are based on a pure "quantity" theory of money, tintured

with some notion that a governmental "fiat" is necessary and sufficient to make money accepted and acceptable. The practical application is that the demonetization of silver in 1873 was the one great cause of the fall in prices thereafter; that as the result of this fall prosperity has been lessened, if not destroyed, and the debtor class has been injured, to the great and continuous benefit of the creditor class; and that the resumption of the free coinage of silver would restore prosperity and remedy the injustice done to debtors. If these things are true, they are just as true in 1900 as they were four years ago; and, if true, they are certainly of more interest to the mass of the people than either imperialism or the question of trusts. Is this issue, so charged with good and evil, to be abandoned; and, if so, why?

Of course such abandonment (if it occurs) may be due merely to the calculation of political leaders that the chance of winning on this issue was shown to be hopeless four years ago. Or it may be held that, under the present conditions of business, it is useless to bring forward an issue which presupposes that the mass of people are suffering. When men are making money, they are not apt to inquire closely into the working of the machinery of production, but are usually content with current conditions. This is the common explanation of the apparent loss of interest in the movement for the free coinage of silver, both in Congress and in the former silver states. The change from silver to gold mining (as in Colorado), the bountiful harvests of the last few years, the rise in the prices of wheat and cotton — in short, prosperity has diverted the attention of the people from the monetary question. All these, however, are temporary causes, and the conditions may at any time be reversed. If these are the sole causes of the lack of interest in the silver question, a period of depression will make it needful to meet this issue again.

On the other hand, it may be asserted that the advocates of free silver in the campaign of 1896 failed to prove the great theses which they laid down. Or it may, at least, be said that they failed to make their position so convincing as to leave a lasting impression. If this has been the result of "the great debate," the fact is of permanent scientific interest. For, if all

the concentrated attention which has been paid during the last twenty-five years to bimetallism has not resulted in the establishment of its fundamental dogmas, it would seem that as a theory it is destined to fade away. This negative result would also be of practical importance, because it implies the casting of "free silver," and ultimately of bimetallism, into the limbo of past economic heresies, together with "fiat money," "free banking" and "just prices." It is of interest, therefore, to summarize once more the essential points of the discussion, both for use in case the question does come up again and also as a contribution to the theory of money. How is it, then, that the silver-money men failed to establish their contentions that prices depend upon the quantity of money, that government can control prices by manipulating the supply of money, and that the government by so doing can and ought to remedy injustice between individuals and between classes?

II. *The Quantity of Money.*

The fundamental thesis of the bimetallists and of the free-silver advocates is that prices are determined by the quantity of money. Of course no one will deny that there is a relation between prices and money and that changes in the quantity of money may be reflected in the price level. But to define precisely what this relation is and to measure it quantitatively, is a matter of considerable difficulty. In the first place, it is not easy to define what we mean by the term money. In the monetary system of the United States we have standard gold coins, silver dollars, fractional silver currency, minor coins, governmental paper money, national-bank notes and various forms of certificates—gold, silver and currency. These together (omitting the certificates) form the monetary supply for the purpose of carrying on the trade of the United States. They are, however, of various degrees of importance and perform various functions. The gold money is unlimited legal tender and can be used, not only as a medium of exchange, but also as a reserve and for purposes of export, because it is of full face

value and acceptable all over the world. It is peculiarly convenient as a bank reserve, as a means of hoarding and as a redemption fund for the purpose of keeping other forms of money up to the standard. The silver dollar is likewise unlimited legal tender, and can thus be used as a medium of exchange; but it is unfitted for export, because it is overvalued, and is unfitted for bank reserves, because of its bulk. The fractional silver and minor coins are fitted for retail trade only. The paper money, bank notes and certificates of deposit are useful for media of exchange, especially if they are kept redeemable in standard money. Now, how many of these, and which of them, are to be regarded as money, when we say that the quantity of money determines prices?

There are two ways of defining money so as to arrive at a quantitative measurement of the amount which in the long run affects prices.

First, when we speak of the quantity of money, we may mean that form of purchasing power represented by the medium of exchange which is actually used to carry on trade. A certain number of transactions must be cash transactions. There must be a certain amount of generally acceptable "currency" in the tills and in the pockets of the community. If we do not have such a medium, we are reduced to the inconvenience of barter. Moreover, the greater the number and the size of transactions, — that is, the volume of business, — the greater the quantity of such a medium necessary to maintain the customary price level. If the supply does not increase with the volume of business, the price level must fall.

It is not certain, however, that we really attain definiteness by this apparently definite conception. Such a circulating medium might be composed of standard money, of subsidiary and token coin, and of bank notes and government notes. But the proportion of business transactions which would depend upon these instruments for liquidation would be conditioned by the habits of the community and the character of its business. Where there was a good banking system, checks might be substituted for bank notes. Where ready money was not in circu-

lation, liens might be taken on growing crops and credit given for current purchases. On the other hand, the concentration of retail business in department stores, selling only for cash, might render necessary an increased quantity of this "medium," which could be readily supplied by token coins or notes. There are, in short, various devices whereby the community, if there should be a "scarcity" of such money, could help itself without lowering the price level. It seems, thus, that the conception of money as a medium of exchange in actual use does not point to a quantitative relation between money and prices.

A second conception of money is that which includes only primary, or standard, money. All bank notes and paper money are ultimately redeemable in specie, as all credits extended by banks are based upon the reserve which they maintain. The greater the volume of paper money and of purchasing power exercised in the form of credit, the greater must be the specie reserve to maintain solvability by a guaranty of ready redemption. According to this analysis, the amount of primary specie money in actual circulation, together with that used as a reserve by governments, banks and individuals, constitutes the "quantity" of money. If this amount becomes small, as compared with the volume of business, the price level will fall; if it becomes large, the price level will rise.

What we gain in "intension" by this definition, however, we lose in "extension." The quantity of paper money, bank notes and credit instruments, or purchasing power, which a given mass of primary money can sustain depends so much upon variations in habits of business, in banking systems, in methods of concentrating reserves and in the confidence of the community in the monetary system, that the relation between the quantity of primary money and the volume of currency is entirely indefinite. It is evident, also, that the influence of the quantity of primary money, in this sense, depends largely upon where the money is. If it is in circulation, its influence is of one kind; if it is in the vaults of the government or of banks, its influence is of another sort; if it is hoarded in the pockets or strong boxes of individuals, its influence is of still another character. While, therefore,

by this definition we get a precise notion of "money," the term, so limited, ceases to have definite relations to that exercise of purchasing power which affects prices, and thus the interests of individuals. Until the silver-money men can present us with a definition of money which, on the one side, will afford us the chance to measure it quantitatively and, on the other, will have a dominating influence on purchasing power, their main thesis will remain difficult to prove.¹

III. *From Quantity to Price Level.*

Even if we agree upon what shall be included under the term money, the silver-money men have difficulty in explaining how and to what extent a change in the quantity of money affects prices. They say that an increase in the quantity of money will raise prices and that a decrease in the quantity will lower prices. But under what circumstances, and to what extent, will this be true? This question is of the utmost importance; for how can we adopt a monetary policy looking towards the regulation of prices and the adjustment of economic relations between individuals in accordance with the rule of justice, unless we can determine definitely this relation between money and prices?

We certainly do use expressions which imply that a change in the quantity of money causes a change in the price level. We speak of a "period of inflation," thus correlating high prices and an abundance of money: for example, "an inflated currency," an "inflated bank-note circulation," "inflated credit," *etc.* We speak of a period of "contraction" or low prices, implying a fall in the amount of money or, at least, of purchasing power. When we think of an irredeemable paper currency that has been issued to excess, we expect high prices, which we ascribe to the excessive issues. On the other hand, when a depreciated paper cur-

¹ There are endless discussions concerning the definition of money. A useful review of them is given by A. P. Andrew, "What ought to be called Money?" *Quarterly Journal of Economics*, XIII, 219. Cf. the references there and in the article on "Money," by Francis A. Walker, in Palgrave's *Dictionary of Political Economy*. Cf. also the instructive testimony of Professor Marshall before the Gold and Silver Commission.

rency is reduced in quantity and brought back to par, we fear a lowering of the price level. Thus, when Congress began to "contract" the currency after the Civil War by calling in the greenbacks, the process was stopped from fear of lowering prices. Even in the case of specie money, we are said to have historical examples of a rise in prices due directly to a greatly increased supply of money. For example, after the precious metals were discovered in America and began to flow freely into Europe, there was a general rise of prices. After the gold discoveries of 1848-51 a rise of prices was anticipated, because of the increased quantity of gold. Cairnes described the process, and Jevons even went into an elaborate calculation of the extent of the rise.

The process by which a change in price level is brought about depends, however, upon the monetary system of the country. If we can conceive of a pure cash-payment system, where all transactions require the use of specie money, an increase in the quantity of the precious metals would simply add to the supply of the money material, thus decreasing its value and causing prices to rise—that is, causing more metal to be offered for a given quantity of commodities. But, even in such a system, various things would have to be taken into account. These have generally been considered by the economists under the formula of "the demand and supply of money." The demand is said to depend on the volume of business—that is, the number and the size of the business transactions taking place during a given time. There would naturally be two factors involved here, namely, the amount of commodities to be exchanged and the number of times each was exchanged. But the volume of business varies from country to country and from time to time. When men consume what they produce, comparatively little money is needed. Where they produce goods in exchange for other goods, they need more money. Where industry is highly developed and there is great division of labor, they need still more. This demand for money—described by Walker as a reality—is very difficult to measure.¹

¹ "We see, thus, that the demand for money has no relation to the total wealth, or the annual product of a community, or even to the volume of products to be

On the side of supply, we should have in such a cash system two elements. The first is the amount of metal devoted to monetary use, rather than to use in the arts and to hoarding. This will vary according to the tastes and the habits of the people. But we have here a regulative influence, constant and powerful. For when there is a scarcity of money, lowering prices, specie can be withdrawn from use in the arts ; and when there is an abundance of the precious metals, an outlet for the surplus can be found in the arts. The second thing affecting the supply of money is what the economists call the "rapidity of circulation." Business transactions need not be simultaneous, but may be successive. The same piece of specie can then complete two or a dozen or a hundred transactions during the year. Where business is active and exchanges are concentrated in a market, a small amount of money will suffice for a large number of transactions. Where trade is sluggish and exchange takes place only at stated intervals, money remaining long in the pockets of individuals, a large sum will be necessary.

In a strictly specie-money, cash-payment system, therefore, it does not seem possible to specify the amount of money *necessary* for a community or to measure the exact effect on prices of an increase or a decrease of specie. Statistical measurements of the *per capita* amount of specie in circulation in different countries, of the annual increase or decrease in the supply, and of the amount of bullion used in the arts, are very rough methods of estimating the money supply ; while predictions and assertions as to the effect upon prices of a given increase or decrease of the supply of the precious metals would seem to be extremely risky, in view of the many variable forces at work.

Let us now turn from this artificially simplified monetary system of specie payments to the highly complicated exchange system of a modern community, which uses subsidiary coin and

exchanged. The demand for money varies with the amount of money work to be done, which, in turn, varies with the industrial organization of communities, with seasons, and with circumstances innumerable." (Walker, *Political Economy*, p. 130.) Walker is here thinking of a modern community using credit, but the same remarks would hold true of a specie-money, cash-payment system, and *a fortiori* of the modern system.

paper money, and exercises purchasing power through credit. How will an increase or a decrease in the amount of primary money affect prices here? It is evident that we now have a still larger number of variable factors. The demand for money as a circulating medium depends upon the proportion of transactions which are liquidated by the use respectively of money and of credit. On the other hand, the supply of such money depends upon the extent to which subsidiary coin, paper money and bank notes can be based upon a given amount of primary money. Under these circumstances, an increase in the supply of the precious metal (say gold) used as primary money is supposed to affect prices in the following way: Assume that a new supply of gold came into England and was deposited in the banks. Thereupon the banks, finding their cash reserves increased, would discount more freely; business men would extend their enterprises; a greater demand would be felt for commodities and labor; prices would go up and the gold would be indirectly absorbed in the circulating medium, in order to maintain this higher level of prices. If the supply of gold continued, this higher level of prices would become permanent. On the other hand, if gold were withdrawn from the banks, they would raise the rate of discount, business men would curtail their operations, demand would fall off and prices would go down. The supply of the circulating medium would be contracted to correspond to this lower price level; and, if the supply of specie relative to the volume of business remained deficient, the lower level of prices would become permanent.¹ What can now be said of the supply of primary money necessary to maintain a given price level, or of the effect of an increase or a decrease of its quantity on prices? If the problem was insoluble before, under a system of specie-money, cash payments, how much more difficult is it, with all these (and other) methods for avoiding the use of specie!²

¹ See Marshall's evidence before the Gold and Silver Commission, Ques. 9641 ff.

² "For without any change in the amount of the currency the average level of prices might be altered, not only by a change in the proportion of credit to other means of purchasing, but also by any other change in the methods of business, as, for instance, the growth of intermediaries." — Marshall, *op. cit.*, Ques. 9629.

It is owing to the presence of these manifold methods of making exchanges that the silver-money men have failed to convince the community that the fall in prices since 1873 has been due to a real scarcity of money. On this point the statistics of the *per capita* circulation of all kinds of money are not of much avail, because they do not take account of the volume of transactions, the rapidity of circulation and the multiplicity of credit transactions. Such as they are, however, the figures seem to show no falling off in the supply of primary money or of the circulating medium. Even the statistics of the decrease in the annual production of gold down to 1890, when we consider what a small percentage of the total supply of gold in the world is represented by a twenty-five per cent decrease in the annual supply, seem to furnish an inadequate explanation of the fall in prices. Similarly, the increased supply of gold since 1890 has not been reflected in a raised price level.¹

To speak frankly, even if we are convinced that there is a fundamental truth in the so-called quantity theory of money, it is not easy to find cases where we can assert positively that an increase or a decrease of money has caused a rise or a fall in prices — still less, a *corresponding* change. In the case of an irredeemable paper money we can, indeed, measure the increase of the issue and trace the effect upon paper-money prices.² In the case of great crises in the production of the precious metals, largely increasing the supply, we can be reasonably certain, perhaps, that the changed supply has had some effect on prices. But this effect is to be ascribed to the change in the quantity of

¹ "Dr. Soetbeer's estimate of the production of gold since the end of the fifteenth century is £1,553,415,000; and an annual supply of £20,000,000 would consequently be about $1\frac{1}{4}$ per cent on that stock, while the actual diminution in the supply which has taken place during the last fifteen years would amount to only $\frac{1}{4}$ per cent per annum" (Gold and Silver Commission Final Report, Part. I, p. 13). The present annual production of gold is more than £50,000,000, and for ten years the average increase over the £20,000,000 above mentioned has been £16,000,000 per annum.

² Even this has been denied. See Miss Hardy, *Journal of Political Economy*, III, 145, 1895. General Walker's criticisms of Miss Hardy's tables were, in my opinion, just, but they did not invalidate her main conclusion. — *Quarterly Journal of Economics*, IX, 374 (1894-95).

money only under the condition that other things — the volume of business, the habits of the people, the facilities for credit transactions — have remained the same or have been duly allowed for.

IV. *From Price Level to Money.*

In the complicated mechanism of price-making, it is difficult to predict how and to what extent a change in the quantity of primary money should affect prices. But if we cannot directly demonstrate the theory that variation in the quantity of money causes changes in the price level, we can perhaps reverse our method of investigation, by first proving a change in price level and then offering a variation in the quantity of primary money as the only adequate or, at least, the most probable explanation of such a change. It is not meant, of course, that for every change in prices we are to seek a change in the quantity of primary money. Many influences affect market prices, such as fluctuations in the demand for and supply of commodities, extension of credit, speculative purchases or sales according to prospects for the future, changes in taste or fashion, changes in methods of production, substitution of other commodities, *etc.* But if we establish a general and persistent fall or rise in prices, it is the business of the economist to discover, if possible, a general and persistent cause sufficient to explain such change.

In order to preserve the practical bearing of our discussion and avoid the reiteration of the alternative phrases "rise or fall of prices" and "increase or decrease of the quantity of money," let us take the trend of prices since 1873. Let us concede that the method of index numbers shows a general fall in the price level, without going into the question whether or not the amount of the fall is precisely what the number indicates. Finally, let us designate by "scarcity of money" an insufficiency in the supply of the precious metal used as primary money to perform the work required by the volume of business.

The objective phenomenon, therefore, is a shifting of the price level downwards. Where a barrel of flour or a pair of shoes for-

merly cost six dollars, they each cost now (say) four dollars — that is, a third less. Two explanations are possible. Either money has become “scarce,” so that four dollars will buy what formerly cost six, or both flour and shoes require less effort to produce, as compared with primary money, so that larger quantities are given for the same amount of money. The “scarcity of gold” is at first the easiest and the most plausible explanation of a general fall in prices, because it seems simple and adequate. It is, indeed, so easy that it invites to indolence of thought. But one cannot escape the fact that enormous improvements have been made in the production and the transportation of almost all commodities, and that these ought to have had the effect of lowering their prices. When one is troubled, therefore, to formulate in a satisfactory and precise way the quantity theory of money, one is tempted to take refuge in “improvements in production” as an explanation of the fall in prices. To establish the truth of this explanation is, however, very laborious; for it requires an almost painful minuteness of investigation and also a certain amount of technical trade knowledge which few economists possess; but the results have a concreteness not to be found in the assertions of the first theory.¹ There is also an easy compromise explanation, which asserts that both causes have been at work, without specifying the relative strength of the two. This solution we shall avoid, contenting ourselves with an inquiry as to which of the two is the more probable cause or, at least, which is the more important.

While it may not be possible to settle this question with entire certainty, the following points are symptomatic:

(1) If the fall in price level is due to a scarcity of money, one may expect a general uniformity in the movement. The fall need not be perfectly uniform, because special causes may affect particular commodities — sometimes accelerating the fall due to the scarcity of gold, sometimes retarding or even counteracting it altogether. On the other hand, if the fall in prices is due to improvements in production, it is important to note that

¹ The most noteworthy example of this method is Mr. Wells's *Recent Economic Changes*.

these improvements naturally fall into two classes — those affecting all commodities, such as improvements in transportation, and those affecting particular commodities, such as particular inventions or discoveries. Under such conditions we should expect the fall in prices to be general, but not uniform. The problem is, therefore, to decide whether the fall in prices since 1873 has or has not the characteristic of uniformity.

An examination of any of the tables of index numbers shows wide divergences in the ratio of fall. For instance, in the Sauerbeck number for 1897 (compared with the average of 1867–77) sugar had fallen 61 per cent and coffee only 14 per cent ; beef had fallen 28 per cent and prime mutton only 13 per cent ; wheat had fallen 45 per cent and maize 55 per cent ; cotton had fallen 57 per cent and silk 55 per cent ; wool, 41 per cent and hides only 25 per cent. It must be remembered also that retail prices have not fallen as much as wholesale prices ; while, if the cause of the fall has been scarcity of money as a circulating medium, it seems as if they should be at least equally affected. We are justified in saying, then, not that the fall of prices cannot be explained on the theory of a scarcity of money, but only that the facts do not support that theory any more than they do the other. It is at least a great weakness on the side of the silver-money men that they cannot point to the scarcity of money as indisputably the most probable cause of the fall in prices.

(2) According as the fall in prices is due to one or the other of the two causes mentioned, we expect certain subsidiary phenomena to manifest themselves. If the fall is due to a scarcity of money, these should be : a decrease in the annual production of the precious metals, of sufficient magnitude to influence the value of the whole mass ; great difficulty in getting gold for bank reserves ; a rise in the rate of discount, in order to retain gold ; an indisposition to lend money. If gold money is scarce, there may also be expected economies in its use, the diversion of the metal from use in the arts and increased activity in the production of it. But not one of these phenomena has been particularly prominent during the last twenty-five years.

On the other hand, if the fall in prices is due to improvements

in production, one expects an increased supply of commodities, for in general a decrease in cost causes an increase in consumption. It is sometimes erroneously held that the increased supply should be in proportion to the fall in price. But this is contrary to experience; for, owing to differences in the elasticity of demand, a given fall in price affects in varying degrees the consumption of different commodities. Thus, if the price of wheat fell one-half, there might be no very great increase in demand, because the demand for bread is satiable; while, if the price of steel fell one-half, it might be devoted to many new uses. If, by a detailed study of the conditions of the production of specific commodities, the fall in price can be thus satisfactorily accounted for in each case, this is strong evidence that the fall has been due to improvements in production, rather than to scarcity of money.

(3) But the most important symptom of the fall of prices is the behavior of the price of labor (wages), as compared with the prices of commodities. If the fall in prices is due to a scarcity of money, it would seem as if wages should have fallen also. If, on the other hand, the fall in prices is due to improvements in production, resulting from an increased efficiency of labor, the money rate of wages might have remained the same. But the statistics seem to show that wages have been maintained since 1873 in a remarkable way.¹ This is sometimes denied, or the assertion is made that irregularity and lack of employment have more than counterbalanced the increased purchasing power of the wages of that portion of the laboring class which has maintained its position. But it is difficult to understand how a portion of the laboring class has been able to maintain its normal rate of wages, in the face of the competition of hordes of the unemployed.

To sum up this portion of the argument: Reasoning from the objective phenomenon, a fall in prices, it is always difficult to assign with precision the cause or causes of such fall. But as so many and such plausible reasons can be given for the explanation that recent changes have resulted from improved

¹ POLITICAL SCIENCE QUARTERLY, XV, 33 (March, 1900).

methods of production, it is difficult to believe in the scarcity of money as the sole, or even the dominant, cause. In other words, the silver-money men have not only failed to explain clearly how changes in the quantity of money affect prices, but they have also failed to prove that the most probable explanation of the recent fall in prices *is* scarcity of money.

V. *Manipulating the Price Level.*

Professor Marshall, in a note on the purchasing power of money in his *Principles of Economics*, remarks :

We shall find that fluctuations in prices are caused only to a very slight extent by fluctuations in the supply of the precious metals ; and that they would not be much diminished by the adoption of gold and silver instead of gold as the basis of our currency. But the evils which they cause are so great, that it is worth while to do much in order to diminish them a little.¹

Accepting this dictum and granting that changes in the price level may be caused by changes in the supply of the precious metals, what are the remedies proposed ? I shall consider briefly the relative expediency of three — namely, (1) bimetallism, (2) fiat money, (3) a tabular standard.

(1) Bimetallism, it is claimed, would steady prices, by furnishing a broader basis for the monetary system. Instead of the mass of gold *or* the mass of silver, to be affected by changes in the annual production of either metal, we should have the combined mass of the two. In such a system, if the supply of the two metals should increase or decrease together, the effect on the combined mass of the two would be the same as the increase or decrease of either metal on the mass of that metal. But if the changes in the supply of the two metals were in opposite directions, a compensatory action would set in ; for the cheaper metal would be used to satisfy the monetary demand, and the dearer metal would be more or less demonetized, the strain upon it being thereby relieved. In such a case, the compensatory action would probably be effective in keeping the ratio

¹ Bk. vi, ch. vi, note at the end of the chapter.

between the two metals constant. Theoretically, then, it may be conceded that, so far as prices depend upon the quantities of the precious metals, fluctuations ought to be somewhat less under a bimetallic than under a monometallic system. But if gold and silver should increase or decrease together, the effect on prices would be the same as in the case of a single standard. Practically, thus, the gain from bimetallism would not be altogether certain.

The silver-money men were defeated in 1896 by the belief that the free coinage of silver at 16 to 1 would result, not in bimetallism, but rather in the adoption of the single silver standard, accompanied by a tremendous dislocation of business. It was believed that, where the bimetallic area was so limited in extent and the market ratio differed so widely from the legal ratio, the compensatory action would not hold the two metals together. In fact, the adoption of bimetallism by a single nation involves great risk and promises little advantage. International bimetallism, on the other hand, is rendered impracticable by the suspicions and jealousies of nations. At any rate, the risk in trusting all our industrial interests to international agreement seems too great for the expected gain from somewhat greater stability in prices.

(2) Other expedients for controlling prices in the interest of stability may be dismissed with a word. The crudest of these is "fiat money"—that is, notes issued by the government as the sole medium of exchange and regulated in quantity so as to keep prices stable. The world, however, has not yet confidence enough in the wisdom and honesty of governments to stake its industrial fortunes on such an expedient. Governmental paper money has almost always been issued to excess and, instead of steadying prices, has made them fluctuate more violently.

(3) The most scientific expedient is a tabular standard. It is expected to provide for the return to the creditor of command over the same complex of commodities as the debtor received from him. Thus, if \$100 when loaned will buy one bushel of wheat, one ton of iron, one barrel of vinegar, *etc.*, while \$90 will buy the same mass of commodities when the loan is due,

the debt will be payable with \$90. Such an expedient would, however, be of service only in contracts covering some time ; and it would be complicated and uncertain, owing to the difficulty of fixing prices fairly. It would also make the industrial welfare of the individual depend upon fluctuations in the price of commodities in which possibly he had no interest. Suppose, for instance, that a man borrowed \$100 for the purpose of producing wheat and that during the year wheat remained fixed in price, though other articles changed so that the index number rose. The borrower would then be compelled to pay more wheat than he had received.

This brings up the question, whether justice between creditor and debtor demands the return of the same amount of commodities or the same amount of producing power. Assume, for example, that a fall in price has been brought about by improvements in production, due to greater efficiency of labor. The debtor will then return to the creditor a greater sum of commodities, but these commodities will cost him only the same amount of labor. The creditor will receive a greater sum of commodities, but they will give him command over only the same amount of producing power as before. Under such conditions, a change in price level is not necessarily an injustice.

VI. *Mutual Adjustments.*

It remains to be noticed that the very complications which render it difficult, if not impossible, to trace the effect of a change in the quantity of specie on the level of prices, act as so many modifying influences on violent or injurious changes. In a given monetary system a certain amount of specie is used to carry on exchanges and to form a basis for credit transactions. Other things remaining the same, this amount of specie money may even be said to be necessary at the current price level. If, however, the price level should go down on account of the scarcity of specie, the purchasing power of money would increase, it would become more profitable to work mines than to produce commodities directly, gold would be drawn from the arts into mone-

tary use, efforts would be made to economize in the use of specie as a medium of exchange, and the lower price level itself would demand a smaller amount of money as a circulating medium. The so-called scarcity of money would thus remedy itself. If the price level should rise on account of the abundance of specie, the production of the precious metals would be discouraged, specie would be drawn off for use in the arts, bank reserves would be increased, there would be less necessity for using paper money, and the very rise of prices would absorb more of the circulating medium. A change in the price level in either direction that results from a change in the supply of specie would thus seem to bring forth counteracting forces which tend to neutralize it. When we consider the inventive power of the modern community in providing forms by which purchasing power can be exercised without the use of specie, and when we consider the enormous reservoir of specie used in the arts and as reserves, there would seem to be a considerable power of adjusting the quantity of specie money to changes in business. We are, perhaps, unnecessarily frightened at the cry of a "scarcity of gold."

If, on the other hand, improved methods of production increased the supply of commodities, prices would fall. More commodities would be given for the same amount of money. If the improvement occurred in a single commodity, the price of that single commodity would fall, and the particular producer would be obliged to share the benefit of the improvement with the consumer. If the improvements were general, all producers would give more of their commodities for the same amount of purchasing power and all prices would fall. This is simply saying that all consumers would benefit from the general improvement. Each would get less money for his own commodity, but each would be able to buy more commodities with the money he got. As each produced more commodities, his total income might remain the same or even increase. In other words, *per capita* production (and hence consumption) would increase. The community would thus be better off, even with declining prices. The fall in prices would also be mitigated by the process described in the preceding paragraph — namely, the increase of the supply

of specie devoted to monetary use, owing to the increased purchasing power of money.

Such a process cannot, it is true, go on and leave individuals in exactly the same condition as before. The transition will bring hardship to some and perhaps unexpected (possibly undeserved) gains to others. Much will depend upon how fast incomes change and how far men have deferred claims payable in terms of money. But if there is any power in competition to adjust reward to effort, such adjustment will inevitably take place; and the mechanism of prices, even though working imperfectly, will be a powerful aid thereto. The change in price level is necessary in order to distribute the benefits of improvements in production. We perhaps exaggerate the hardships, forgetting the compensatory adjustments by which what a man loses as producer he gains as consumer.

From the practical point of view, it is not clear, moreover, that efforts to manipulate prices by increasing or decreasing the money supply will make adjustments more perfect. Such efforts rest necessarily upon the primitive theory that the quantity of the circulating medium is the main factor in price-making. This, however, is a pure assumption; and, until we can establish more precisely the relation between quantity of money and prices, such efforts will do more harm than good. It is impossible to say how much more or how much less money should be put into circulation, in order to maintain the present level of prices. Nor is it altogether clear that perfect stability of prices would work justice, when there have been improvements in the methods of production. In fact, efforts to regulate prices by changing the money supply do harm, because they threaten the stability of the standard itself.

The "quantity theory of money," therefore, can hardly be considered an adequate title for a scientific explanation of the whole process of price-making. So long as we continue to use one or two metals as constituting our monetary unit, they will necessarily be referred to as ultimate standards. So long as these metals are used in the mechanism of exchange, either as part of the circulating medium or as a reserve fund for liqui-

dating credit instruments, they will be in demand. This monetary demand will constitute part of the whole demand for them, which, in connection with the supply, will determine their value. But this monetary demand is not fixed. It can be satisfied in other ways, and in so many ways that the mere quantity of specie can scarcely have a determining influence on the price level. Price level, it appears, is determined by the exercise of purchasing power. When a man throws commodities on the market, he acquires purchasing power. This may take the form of specie money, of bank notes, of credit instruments, of bank deposits or even of book credit. Its expansion is not closely dependent on the quantity of specie, nor is its contraction. Doubtless the mechanism of exchange facilitates or hinders the exercise of this purchasing power. The apprehension of a tight money market — owing, say, to a locking up of a part of the specie and paper money in the Treasury or to an unusual demand for money to move the crops — often has the effect of depressing speculative prices; and the reverse phenomenon, the effect of “boom-ing” prices. Is this a proof of the quantity theory of money? Not at all. It is proof of the effect of “confidence” on prices. When men find it easy to exercise purchasing power, demand will be great and prices will be high. When they find it difficult to exercise purchasing power, demand will slacken and prices will fall. But in the long run prices will depend upon the desirability or undesirability of having the commodities.

What, then, becomes of the economist who denies the quantity theory of money? Is he not already condemned? Listen to Mill:

That an increase of the quantity of money raises prices and a diminution lowers them, is the most elementary proposition in the theory of the currency, and without it we would have no key to any of the others.¹

We might as well lay down the proposition that man cannot live without meat. If by meat we mean food, the proposition is

¹ Mill, *Principles*, bk. iii, ch. viii, par. 4. Of course Mill was aware of the limitations and explanations necessary, but the above sentence is often quoted as it stands.

true ; and so, if by money we mean all exercise of purchasing power, the proposition is true. But if by meat we mean a particular kind of food, and by money a particular kind of purchasing power, both propositions are open to doubt.

Money is a human invention intended to facilitate exchange. By a process of natural selection civilized nations have acquired the habit of using gold as primary money. It is, doubtless, highly expedient that we should have a supply of gold sufficient to make the machinery of exchange work easily. But have we no substitute for it ? Are we bound down to gold, so that the dead instrument has become the vital principle of the whole economic life of man ?

RICHMOND MAYO-SMITH.